

# State of the Roadway Network in Paradise Valley



# IMS

Infrastructure Management Services

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# ***Purpose of This Presentation***

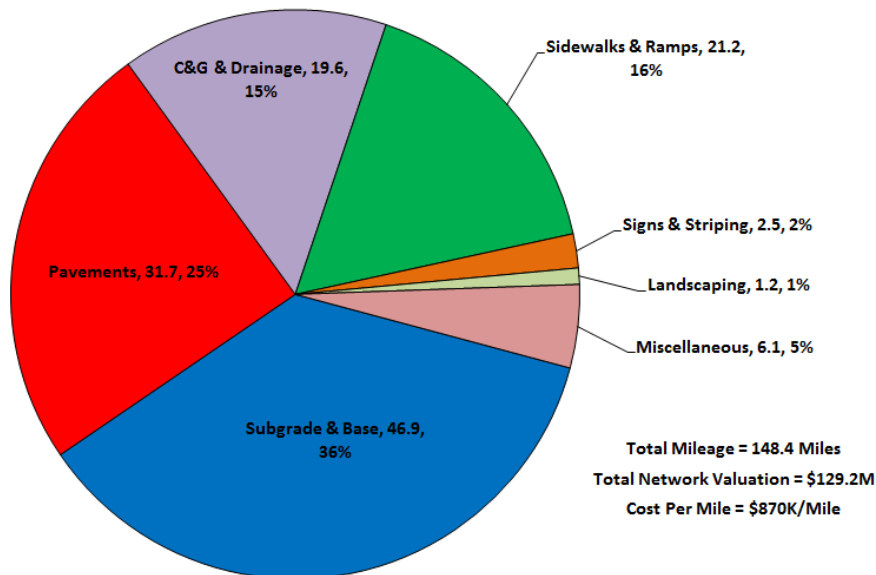
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- ☐ ***June 2019 Pavement Condition Index (PCI) Results***
- ☐ ***Town Pavement Management Strategy***
- ☐ ***Understanding Current PCI Ratings***
- ☐ ***Reviewing Town Funding Models***



# Scale of Investment ...

Town of Paradise Valley, AZ  
Network Valuation

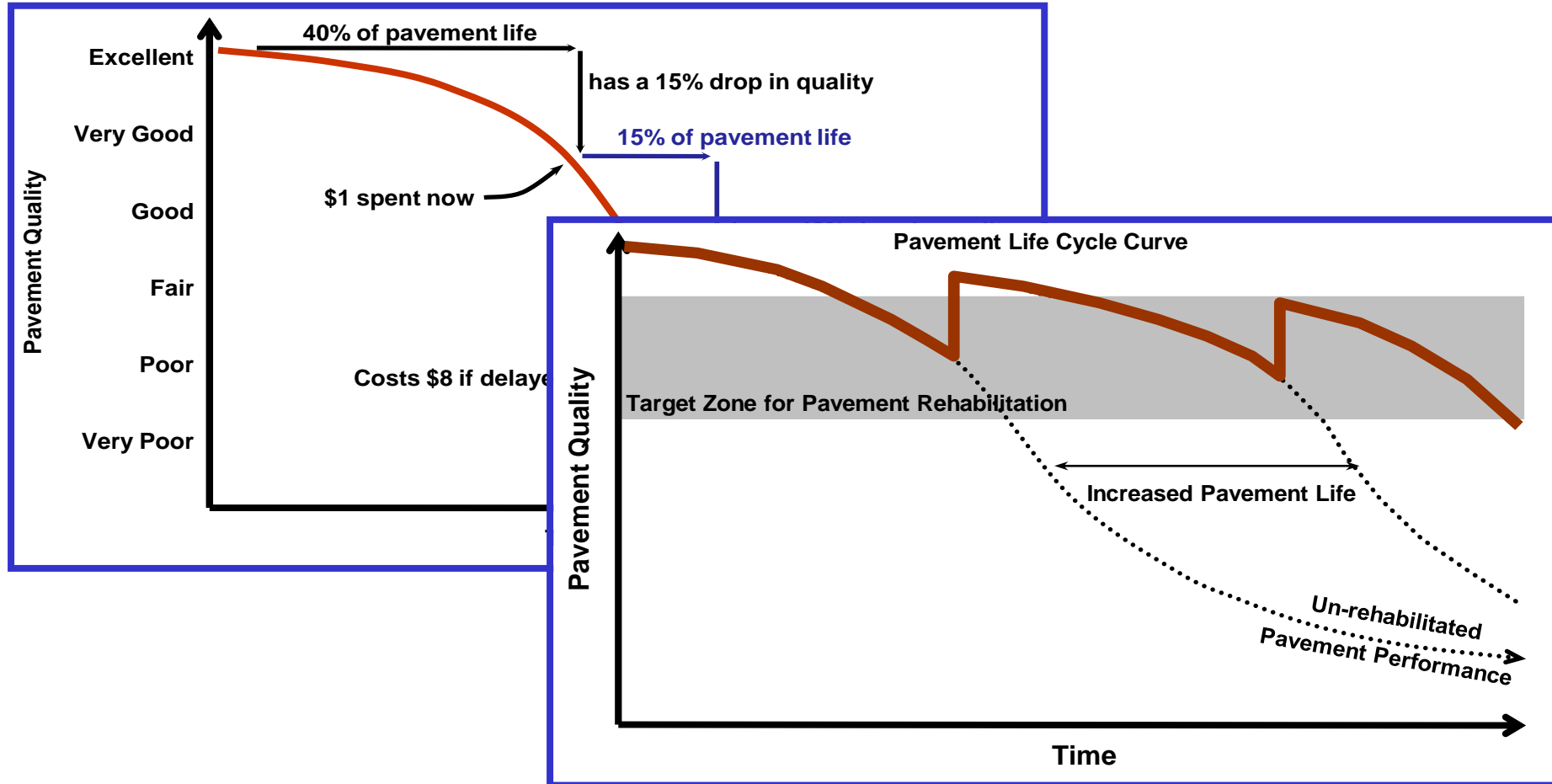


*~14,293 people*  
*~148 CL miles of Town owned roadways*  
*2.6M square yards of pavement*

*Single largest Town asset valued at*  
*\$870K/mile or \$129M total plus*  
*improvements and ROW*  
*(not including the value of land, bridges, sidewalks, etc.)*

*Early look at the condition score:*  
*PCI = 77 (Very Good)*  
*Back log = 0.2% (target  $\leq 10\%$ )*

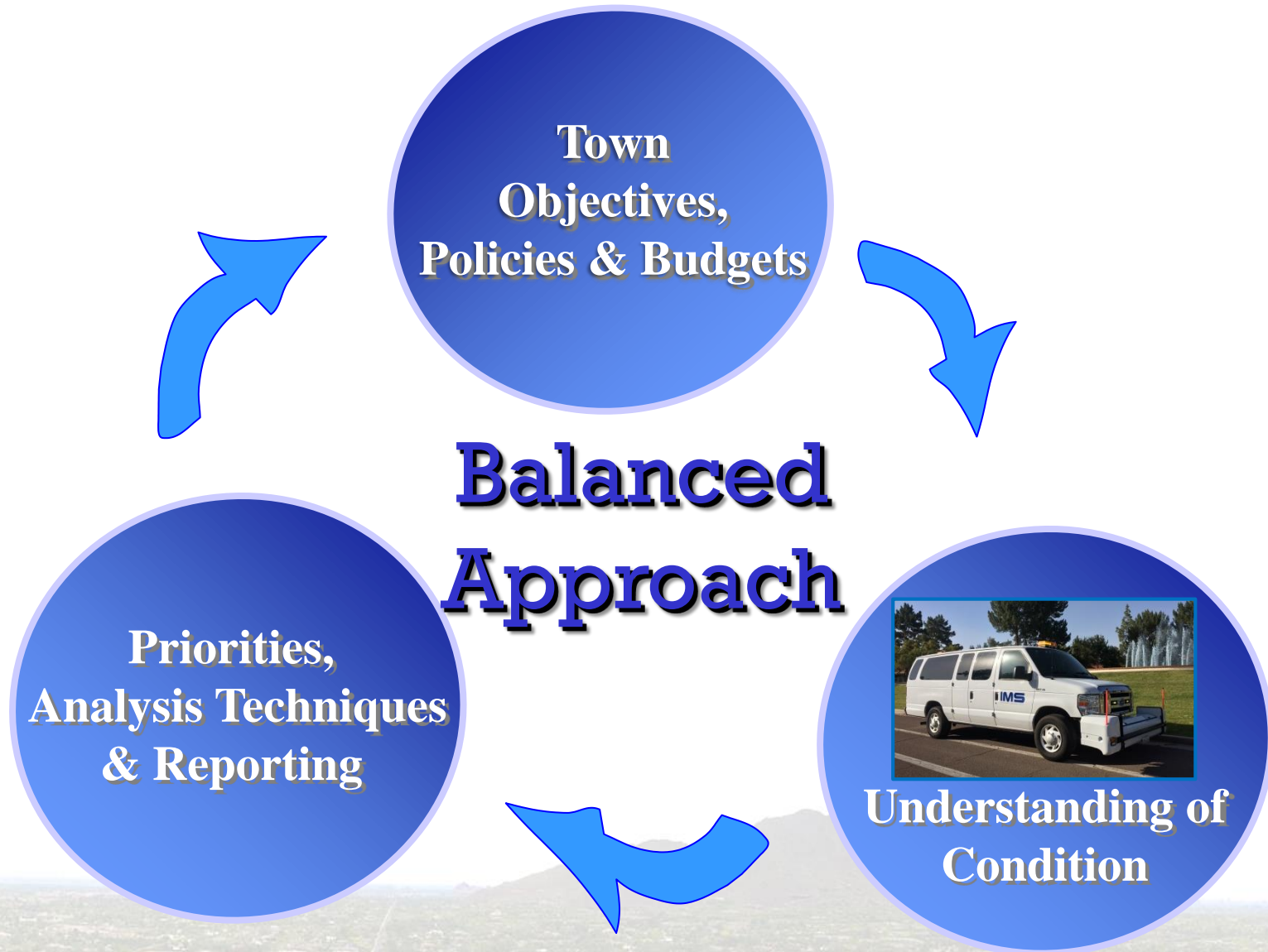
# Why do Pavement Management?



A pavement management system is a set of tools or methods that assist decision makers in finding optimum strategies for providing and maintaining pavements in a serviceable condition over a given time period

# ***Concept of Pavement Management ...***

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# ***Tools to Rate the Streets – Objective Surveys ...***

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## **Condition Focuses On:**

*Roughness*  
*Wheel Path Rutting*  
*Alligator Cracking*  
*Longitudinal Cracking*  
*Transverse Cracking*  
*Distortions*  
*Bleeding*  
*Weathering/Raveling*  
*Patching & Potholes*

# ***Understanding the PCI....Very Poor (0 – 25)***

GISID: 9621

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AGUA DEL ORO CIR



**Base &/or Structural Failures**  
**Rutting**  
**Excessive Cracking**

*(Not a Paradise Valley road)*

**Past point of overlay based  
rehabilitation.**

**Rehabs often driven by citizen  
complaints.**

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2018/03/30 21:52:23

**Safety becomes a concern at very  
low PCI.**





# ***Understanding the PCI ... Poor to Marginal (25 – 50)***

**Localized base failures  
Rutting at intersections  
Extensive cracking  
Extensive patching**



**Tired streets due for a thicker overlay, possibly a surface removal and replacement on ACP roads.**

**Critical roads in this category are a high priority to avoid reconstruction**

**Less than 5% of PV road network falls into these categories**



# ***Understanding the PCI ... Fair (50 – 60)***

GISID: 5459

PARA004\_000649\_0012\_CF.jpg

E BERNEIL DR



**Progressive cracking**  
**Few base failures**  
**Localized distresses**

**Optimum timing for thin – moderate overlay.**

**Many benefits to selecting these streets: early lower cost – greater return, less grinding**

**A little less than 10% of the PV road network falls into this category**

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2019/01/24 22:28:26





# ***Understanding the PCI ... Good (60 – 70)***

GISID: 5415

PARA006\_000920\_0001\_CF.jpg

E VIA LOS CABALLOS



## **Few localized distresses** **Minimal base failures**

If distressed due to loading on  
ACP roads, may need thin  
overlay, otherwise crack seal and  
surface treat (micro seal, PMM).

30% of the PV road network falls  
into the Good category

## **Greatest cost benefit:**

Thinner strategies  
Less crown build-up  
Less intrusive rehab



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2019/01/25 21:19:25

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# ***Understanding the PCI ... Very Good (70 – 85)***

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GISID: 3908

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E MAVERICK RD



**Very few distresses**

**No rutting**

**No base failures**

**Crack seal with surface treatment on asphalt roads.**

**Extends pavement life at lowest cost**

**Approximately 28% of the PV network falls into the Very Good category**

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2019/01/23 20:51:07

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# ***Understanding the PCI ... Excellent (85 – 100)***

GISID: 6056

PARA011\_001863\_0041\_CF.jpg

N PARADISE VIEW DR



**Like new condition**  
**Very few minor distresses**  
**Smooth ride**

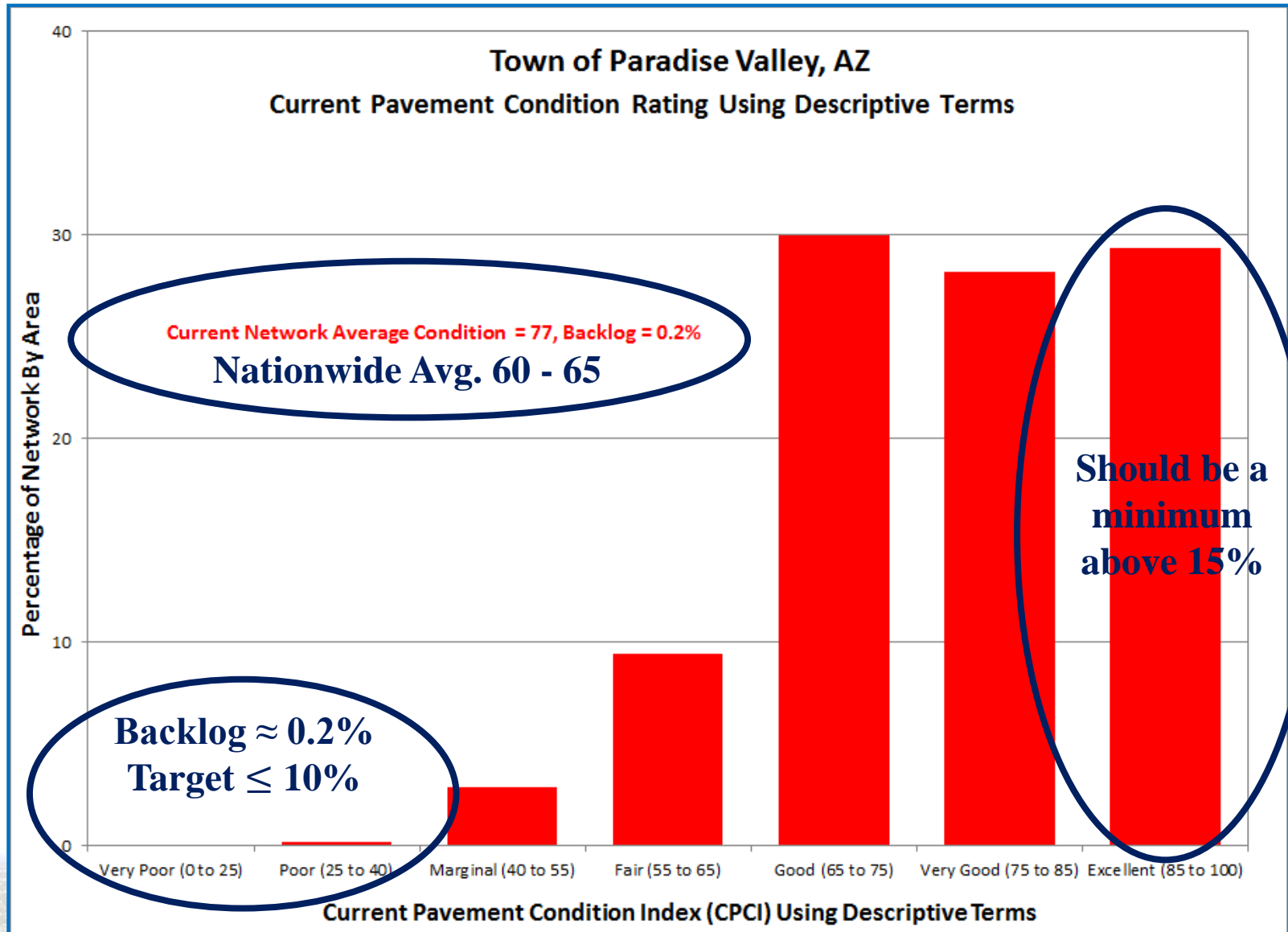
**Should provide 3 to 5 years  
prior to first rehabilitation with  
routine maintenance**

**29% of the PV road network  
falls into the Excellent category**

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2019/01/28 20:35:14

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# Paradise Valley Results ... 3 metrics of health



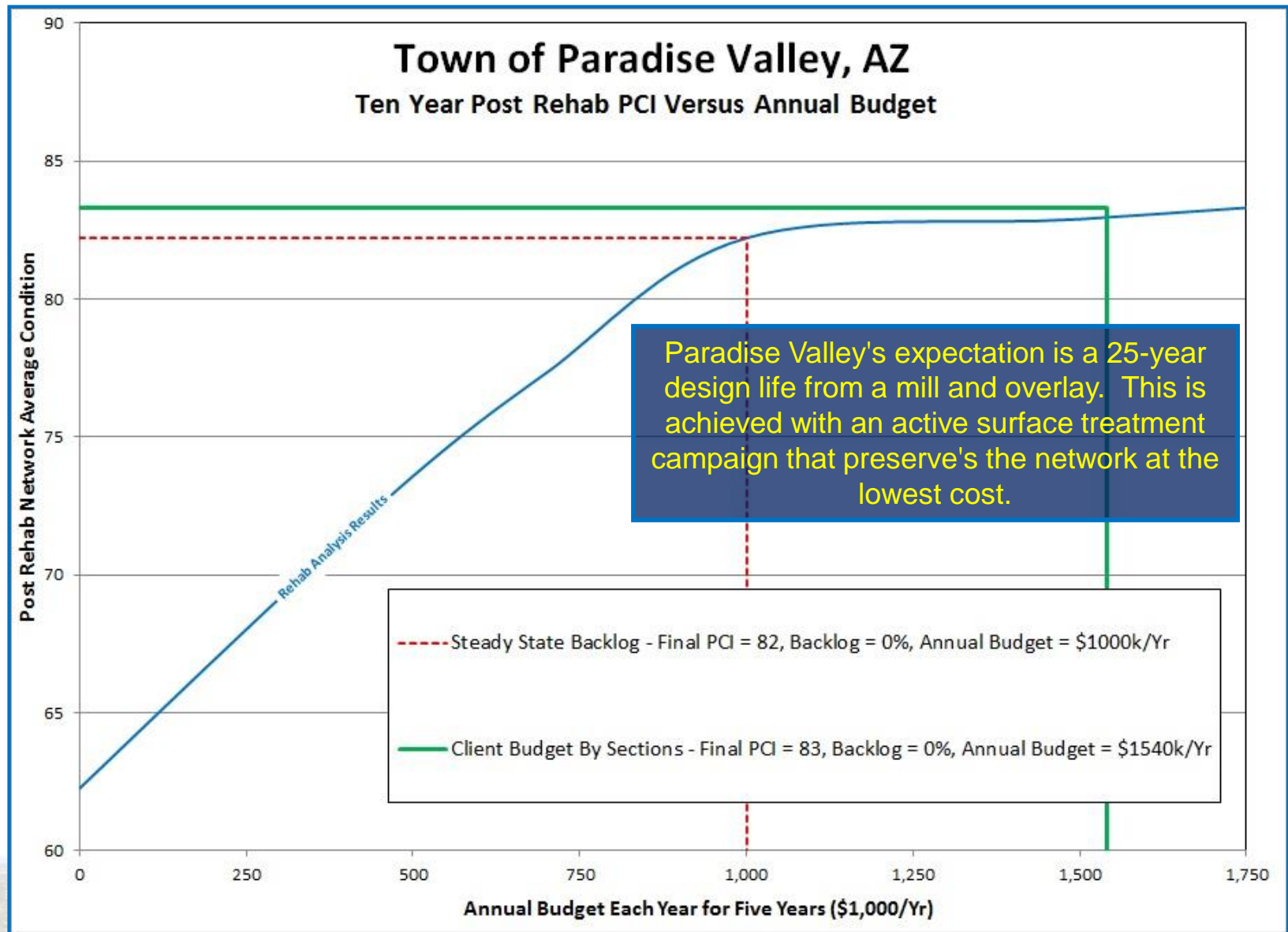
# ***Town of Paradise Valley Methodology ...***

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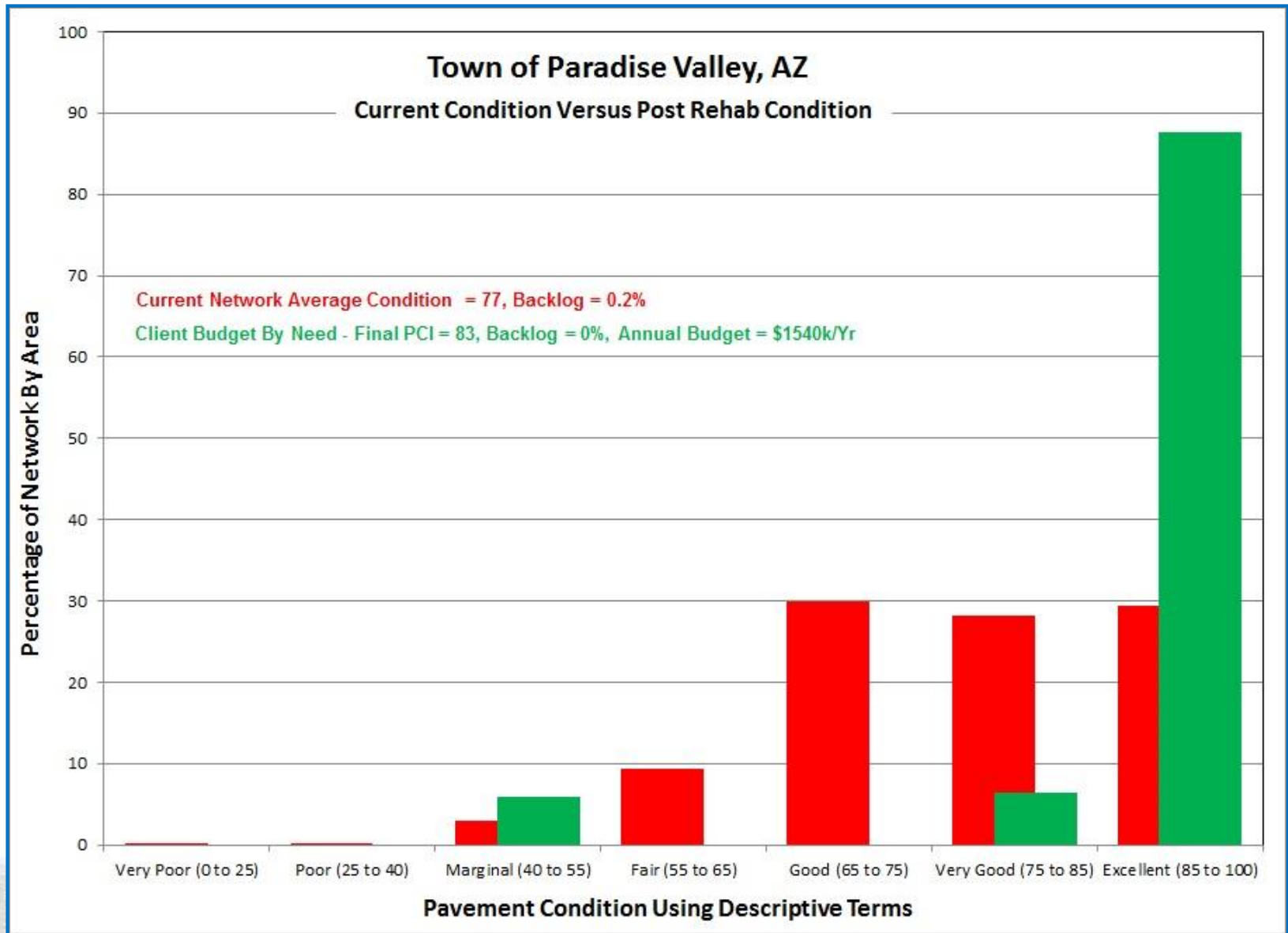
1. Funding is not \$0, nor is it unlimited
2. Paradise Valley places a value on its roadway network  
*Arterials – Collectors – Locals*
3. Identify annual budget to maintain current PCI & Backlog
  4. Examine effects of current funding levels
  5. Prevent deterioration in pavement quality
  6. ADA compliance not included
  7. No cost inflation
8. Pavement management is priority based, not worst-first



# Post Rehab PCI & Annual Funding ...



# ***Post Rehab PCI & Annual Funding ...***



# ***Town of Paradise Valley Summary ...***

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1. At a minimum maintain PCI at or above 77 with a backlog below 5% for entire roadway network.
2. The Town's planned budget of \$1.54M annually will result in a network PCI of 83 and backlog of 0% over the next 10 years.
3. Less than 1 in 20 municipalities we survey will score above a network average PCI score of 80.
4. This Town's annual investment has put the town of PV's roadways in the top 10% of agencies across the nation.
5. Public Works reviews rehabilitation strategies on an annual basis to maximize the service life of roadways.
6. Steady – effective rehabilitation and maintenance on an annual basis will continue to save the Town money over deferred maintenance.
7. Town should resurvey their streets every 5-years to update the condition data, budget models, and rehab program.



# Questions? ...

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